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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/619,364	07/14/2003	Philip Head	22618	6817

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EXAMINER

GAY, JENNIFER HAWKINS

ART UNIT

PAPER NUMBER

3672

DATE MAILED: 07/06/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/619,364

Applicant(s)

HEAD, PHILIP

Examiner

Jennifer H. Gay

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 June 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 20-46 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 20-46 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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DETAILED ACTION

Claim Objections

1. Claims 20, 29, 44, and 46 objected to because of the following informalities: there is a lack of antecedent basis for “the borehole” in the above claims. Appropriate correction is required.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 44 and 45 are rejected under 35 U.S.C. 102(e) as being anticipated by Portman et al. (US 6,651,289).

Regarding claim 44: Portman et al. discloses an apparatus for downhole drilling that includes the following features:

- A drilling unit that includes a drill bit **64** disposed on tubing **66**.
- A motor **12, 14, 16** to drive the drill bit.
- A thruster means (14:50-65) on the tubing to engage the inner surface of the borehole to urge the tubing downward.
- A cable means **10** to energize the downhole equipment.

Regarding claim 45: The thruster means includes at least two thruster units that would be inherently located at different locations on the tubing (14:50-65).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 20, 22, 24, 26, 29, 33, 36, 38, and 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Messenger (US 4,368,787) in view of Tullos et al (US 4,258,802).

Regarding claims 20, 29: Messenger discloses an apparatus for drilling a wellbore that includes the following features:

- A drilling unit including a drill bit **19** where the unit is rotated from the surface (Abstract).
- A tubing **21** from which the unit is suspended.
- A pumping means **31** for drawing fluid from the annulus between the tubing and the wall of the wellbore and up through a central bore of the tubing (6:52-66).

Messenger discloses all of the limitations of the above claims except for the tubing and unit being rotated by a downhole motor.

Tullos et al. discloses a drilling system. Tullos et al. also discloses that is well known in the art that a drilling unit can be rotated either by a rotary table or a downhole motor thus teaching the functional equivalence of the two rotary means.

It would have been considered obvious to one of ordinary skill in the art, at the time the invention was made, to have modified the apparatus of Messenger to include a downhole motor as taught by Tullos et al. in order to have eliminated the power drains associated with drilling a deep well using a rotary table to turn the drill bit (1:37-45).

Further, it would have been considered obvious to one of ordinary skill in the art, at the time the invention was made, to have rotated the apparatus of Messenger with a downhole motor instead of a rotary table, since the examiner takes Official Notice of the equivalence of a rotary table and a downhole motor for their use in the drilling art and the selection of any of these known equivalents to rotate the apparatus of Messenger would be within the level of ordinary skill in the art as evidenced by Tullos et al.

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Regarding claims 22, 24, 26, 29, 28, 48: The pump means includes several pumps located downhole at different locations within the bore of the tubing.

Regarding claim 36: Messenger further discloses a method for drilling a wellbore using the above apparatus.

6. Claims 21, 30, and 41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Messenger in view of Tullos et al. as applied to claims 20, 29, and 36 above, and further in view of Dorel (US 6,047,1784).

Messenger in view of Tullos et al. discloses all of the limitations of the above claims except for motor being electrical where a cable disposed along the tubing supplied the electrical power.

Dorel discloses a drilling system. The system involves the use of a downhole electric motor 13 where a cable 5 supplies the electrical power to the motor.

It would have been considered obvious to one of ordinary skill in the art, at the time the invention was made, to have modified the apparatus of Messenger in view of Tullos et al. to include an electrical motor such as that taught by Dorel in order to have used a motor that was capable of rotating the drill bit without the need for hydraulic fluid or a downhole battery.

7. Claims 23, 25, 31, 32, 37, and 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Messenger in view of Tullos et al. as applied to claims 20, 29, and 36 above, and further in view of Wallussek et al. (US 4,596,293).

Regarding claims 23, 31, and 39: Messenger in view of Tullos et al. discloses all of the limitations of the above claims except for the pump being an electric pump.

Wallussek et al. discloses a system and method similar to that of Portman et al. Wallussek et al. further teaches the use of a pump that could be either hydraulic or electric (5:20-27).

It would have been considered obvious to one of ordinary skill in the art, at the time the invention was made, to have modified the system of Messenger in view of Tullos et al. to use an electric pump instead of a hydraulic pump as taught by Wallussek

et al. in order to have eliminated the need for downhole hydraulic fluid or motivating fluid thus reducing the likelihood of failure.

Further, it would have been considered obvious to one of ordinary skill in the art, at the time the invention was made, to have used an electric pump instead of a hydraulic pump, since the examiner takes Official Notice of the equivalence of an electric pump and a hydraulic pump for their use in the downhole drilling art and the selection of any of these known equivalents to move drilling fluid would be within the level of ordinary skill in the art as evidenced by Wallussek et al.

Regarding claims 25, 32, and 37: Messenger in view of Tullos et al. discloses all of the limitations of the above claims except for the pump being located in the annulus upon the outer surface of the tubing.

Wallussek et al. further teaches that the drilling unit includes an inner and outer tube with the pump 10 being located on the outer surface of the inner tube (Figure 3).

It would have been considered obvious to one of ordinary skill in the art, at the time the invention was made, to have modified the apparatus of Messenger in view of Tullos et al. so that the pump was located on the outer surface of the tubing as taught by Wallussek et al. in order to have not inhibited the flow of fluid through the bore of the tubing thus not effecting the pressure within the tubing.

8. Claims 27, 28, 34, 35, 42, and 43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Messenger in view of Tullos et al. as applied to claims 20, 29, and 36 above, and further in view of Portman et al. (US 6,561,289).

Messenger in view of Tullos et al. discloses all of the limitations of the above claims except for the apparatus including sensors for monitoring the motor and drill bit as well as directional sensors.

Portman et al. discloses a drilling system. The system includes sensors for monitoring the motor and drill bit, i.e. the speed and location of the bit (14:64-15:34).

It would have been considered obvious to one of ordinary skill in the art, at the time the invention was made, to have modified the apparatus of Messenger in view of Tullos et al. to include sensors to monitor the motor and drill bit as well as directional

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sensors as taught by Portman et al. in order to have provided a means for constantly monitoring the progress of the drilling apparatus thus enabling an operator to be make corrections to the apparatus and drilling direction when necessary.

9. Claim 46 is rejected under 35 U.S.C. 103(a) as being unpatentable over Messenger in view of Dorel.

Messenger discloses an apparatus for drilling a wellbore. The apparatus includes the following features:

- A drilling unit that includes a drill bit **19** disposed on tubing **21**
- A motor (the motor of a rotary table, Abstract) to drive the drill bit.
- A pumping means **31** for drawing fluid from the annulus between the tubing and the wall of the wellbore and up through a central bore of the tubing (6:52-66).

Messenger discloses all of the limitations of the above claims except for the apparatus including formation sensors that energized by a cable means.

Dorel discloses a drilling apparatus. The apparatus include formation sensors (3:65-4:25) that are energized by a cable means **5**.

It would have been considered obvious to one of ordinary skill in the art, at the time the invention was made, to have modified the apparatus of Messenger to include the cable energized formation sensors of Dorel in order to have been able to continuously evaluate and automatically control the drilling operation (2:15-20).

Response to Arguments

10. In view of applicant's amendment, the objection to the drawings, specification, and claims except that listed above have been withdrawn.

11. Applicant's arguments filed 02 June 2005 have been fully considered but they are not persuasive.

In response to applicant's argument with regards to claim 44 that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., circulating fluid down an annulus between a tubing and the

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borehole then up through the tubing using a pump means) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

12. Applicant's arguments with respect to claims 20-45 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

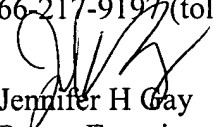
13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

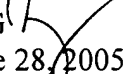
The remaining references made of record disclose various drill systems that use reverse circulation.

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jennifer H. Gay whose telephone number is (571) 272-7029. The examiner can normally be reached on Monday-Thursday, 6:30-4:00 and Friday, 6:30-1:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Bagnell can be reached on (571) 272-6999. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Jennifer H Gay
Patent Examiner
Art Unit 3672

JHG 
June 28, 2005